

Appl. No. 10/666,188  
Amdt. Dated 19 April 2005  
Reply to Office action of 21 January 2005

## **REMARKS/ARGUMENTS**

This is responsive to the Office Action mailed on January 21, 2004. In the Office Action, claims 37, 46 and 47 were objected to for certain Informalities, and claims 36, 37, 39-47 were rejected under 35 USC §102 (b) as being anticipated by Hughes (U.S. Patent No. 5, 754,622).

### **Claim Objections**

Claims 36, 45, 46 and 47 have been amended, without adding new matter, to address the informalities, including providing sufficient antecedent basis as suggested by the Examiner. Applicant thanks the Examiner for pointing out the informalities.

### **Claims define allowable subject matter over the applied art**

Applicant respectfully traverses the rejection of claims 36, 37, 39-47 under 35 USC §102 (b) as being anticipated by Hughes. More specifically Applicant respectfully submits that Hughes does not teach or disclose the independent claims 36, 44 and 45 recitations of (with emphasis added):

36. ...a collimator comprising an **adjustable geometry aperture assembly configured such that an adjustment of the aperture geometry is synchronized with the movement of said radiation source** and coordinated with the radiation source position so as to limit the incident radiation to a predetermined exposure area at said detector.

44. ...**adjusting an aperture by synchronizing the aperture geometry adjustment with the movement of said radiation source...** collimated to limit the incident radiation to a predetermined exposure area at a radiation detector.

45. ... a collimator comprising an adjustable geometry aperture assembly configured such that an adjustment of the geometry of an aperture geometry is **synchronized in time with respect to a movement of said radiation source** and coordinated in space with respect to the radiation source position so as to **limit the incident radiation of the tomosynthesis system to a predetermined exposure area at said detector.**

For anticipation under 35 USC 102, the reference must teach every aspect of the claimed invention, either explicitly or impliedly.

With respect to claim 36, Hughes does not disclose, teach, or suggest, either explicitly or impliedly, at least the above highlighted recitations of a radiation imaging system, namely the adjustable geometry aperture assembly configured such that an adjustment of the aperture geometry is synchronized with the movement of the radiation source or limiting the incident radiation to a predetermined exposure area at the detector. Similarly, with respect to claim 44, Hughes does not

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disclose, teach, or suggest, either explicitly or impliedly, at least the above highlighted limitations of a method of radiation imaging, namely adjusting the aperture by synchronizing the aperture geometry adjustment with the movement of the radiation source. Again, with respect to claim 46, Hughes does not disclose, teach, or suggest, either explicitly or impliedly, at least the above highlighted limitations of a collimator having an aperture geometry that is synchronized in time with respect to a movement of the radiation source and coordinated in space with respect to the radiation source position so as to limit the incident radiation of the tomosynthesis system to a predetermined exposure area at the detector.

In contrast, Hughes appears to describe a technique for verifying the radiation delivered to the object (column 2, lines 46-47). Specifically Hughes describes a technique whereby the amount of radiation exiting the object is measured via a detector and this information (exit dose information) is used to verify the radiation treatment (column 4, lines 30-45). Nowhere does Hughes disclose, teach or suggest the synchronization of the aperture geometry with the radiation source as recited in the independent claims 36, 44 and 45. In fact, Hughes appears to be completely devoid of any discussion about synchronization or timing either explicitly or impliedly. Further, with respect to limiting the radiation, Hughes describes "plates" in one embodiment as being mounted between the radiation source and the patient to delimit the radiation such that it more accurately irradiates the imaging field (column 3, lines 56-64). "Imaging field" is described in Hughes as the area of the patient that is irradiated (column 3, line 54). Also, Hughes in column 5, lines 20-25 specifically states that,

[W]edge filter 41 and aperture plates 42 and 43 can be provided in the path of radiation beam 1 such that the radiation is focused on the area to be irradiated.

Thus, in Hughes the motivating factor is to **irradiate only a specific area in the anatomy**, without exposing other areas to a substantial amount of radiation, and the focus is not at limiting the radiation at the detector as is recited in the independent claims 36, 44 and 45.

From the "Response to Arguments" section of the Office Action (page 5), Applicant notes that the Examiner appears of the opinion that two features, namely synchronization and limiting the radiation at the detector, are inherent in Wofford. Applicant submits that, before a reference can be found to disclose a feature by virtue of its inherency, one of ordinary skill in the art viewing the reference must understand that the unmentioned feature at issue is *necessarily present* in the reference. In addition, a result is inherent if it *naturally flows* from the teaching of the prior art. See *Finnigan Corp. v. International Trade Commission*, 180 F.3d 1354, 1365 (Fed. Cir. 1999) (quoting *Hansgirg v. Kemmer*, 102 F.2d 212, 214, 40 U.S.P.Q. 665, 667 (C.C.P.A. 1939)). The test of inherency is not satisfied merely by what a reference *may* teach. "Inherency . . . may not be

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established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient." *Continental Can Co. USA v. Monsanto Co.*, 20 U.S.P.Q2d 1746, 1749 (Fed. Cir. 1991) (emphasis in original).

Applicant respectfully traverses the alleged inherency of both features. Specifically, Applicant traverses the statement in page 3, paragraph 1 of the Office Action that suggests that Applicant's claimed synchronization is inherent because the system is an intensity modulated radiation therapy. The cited language of Hughes (column 3, lines 54-66) relates to use of plates between the radiation source and the patient for limiting the radiation on the patient (not the detector). Additionally, Applicant traverses the statement in Page 3, paragraph 2 that "the treatment radiation is always limited to incident on an imaging area of the detector; otherwise, the healthy tissues in the neighborhood of the treatment zone would be damaged." Prior approaches which limit radiation on the patient do not "necessarily" include synchronized adjustments of the aperture geometry to limit the incident radiation on the detector as claimed.

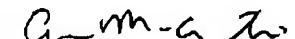
Accordingly, Applicant respectfully submits that independent claims 36, 44 and 45 define allowable subject matter over the applied art. Claims 37, 39-43, depend directly or indirectly from claim 36, and claims 46 and 47 depend directly or indirectly from claim 45 and hence are similarly allowable. Withdrawal of the rejections is respectfully requested, and allowance of the claims 36, 37, 39-47 is respectfully solicited.

#### Summary

In view of the foregoing, Applicant respectfully submits that the application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are respectfully requested.

Should the Examiner believe that anything further is needed to place the application in even better condition for allowance, the Examiner is requested to contact applicant's undersigned representative at the telephone number below.

Respectfully submitted,

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